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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,556	02/04/2002	Ravi Narasimhan	MP0091	4335

26703 7590 07/14/2006

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EXAMINER

GHEBRETINSAE, TEMESGHEN

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 07/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,556

Applicant(s)

NARASIMHAN, RAVI

Examiner

Temesghen Ghebretinsae

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28, 38, 40-54, 57-59, 68-84, 87-89, 98-114 and 117-119 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 52-54, 57, 82-84, 87, 112-114, and 117-119 is/are allowed.
- 6) ☒ Claim(s) 1-8, 11, 13, 14-16, 26, 28; 17-23; 38, 40-43, 44; 45, 47-49; 68-79; 58; 88; 98-109 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/21/06

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. It would be of great assistance to the Office if all incoming papers pertaining to a filed application carried the following items:

1. Application number (checked for accuracy, including series code and serial no.).
2. Group art unit number (copied from most recent Office communication).
3. Filing date.
4. Name of the examiner who prepared the most recent Office action.
5. Title of invention.
6. Confirmation number (See MPEP § 503).

Claim Objections

2. Claims 69 and 99 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 69 and 99 are not further limiting the claimed correlating of 68 and 98.

Claim Rejections - 35 USC § 101

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 58 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. In claim 58, the generated product has no practical application. The generated product is never used (see claim 59).

9Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1,14,17,38,44,58 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: calculating or estimating carrier frequency offset. The claims are directed to a method for estimating carrier frequency offset in OFDM but no estimation of a carrier frequency is done in claims 1,14,17,38 and 44. (see claim 9,24,50,59)
6. Claims 68,88and 98 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: means for generating a carrier frequency offset estimate. The claims are directed to a carrier frequency offset estimator for OFDM but no carrier frequency offset is estimated in claims 68 and 98.(see claim 80 and 110)
7. Claims 1-8,11,13, 14-16,26,28; 17-23; 38,40-43,44; 45,47-49; 68-79; 58; 88; 98-109 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1; 14; 17; 38; 44; 58; 68; 88; 98 are incomplete as claimed. The claims are directed to a method or apparatus for **estimating carrier frequency offset** in OFDM. However, none of the claims calculate or estimate a carrier frequency offset. The carrier frequency offset estimation for claim 1 is done in claim 9; for claim 17 in claim 24; for claim 38 in claim 50; for claim 68 in claim 80 and for claim 98 in claim 110.

In claim 44, "said correlation signal" lack clear antecedent basis.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1,11,13 are rejected under 35 U.S.C. 102(e) as being anticipated by You et al. (US2003/0112743).

10. You disclose a method for estimating carrier frequency offset in OFDM receiver comprising :receiving at least two adjacent (consecutive) short training symbols; sampling the at least two adjacent (consecutive) short training symbols; and correlating the least two adjacent (consecutive) short training symbols. (see paragraph 0010)

11. Claims 14,15,26,28 are rejected under 35 U.S.C. 102(e) as being anticipated by You et al. (US2003/0112743).

12. You discloses a method for estimating carrier frequency offset in OFDM receiver comprising : receiving a plurality of short training symbols; sampling the short training symbols; and correlating samples from the short training symbols in a first half of the sampling window with samples from the short training symbols in a second half of the sampling windows to generate a correlation signal. (see paragraph 0011 to 0014,0066).

Allowable Subject Matter

13. Claims 52-54, 57,82-84,87,112-114 and 117-119 are allowed.
14. Claims 2-12,16 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.
15. Claims 17; 38; 44; 58; 68; 88; 98 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Response to Arguments

16. Applicant's arguments with respect to claims 1-38; 40-54;57-59; 68-84;87-89;98-119 have been considered but are moot in view of the new ground(s) of rejection.
17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Temesghen Ghebretinsae whose telephone number is 571-272-3017. The examiner can normally be reached on Monday-Friday from 8 to 6. The examiner can also be reached on alternate .

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel, can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T.G. 6/29/06

Temesghen Ghebretinsae
Primary Examiner
Art Unit 2611

TEMESGHEH GHEBRETISSAE
PRIMARY EXAMINER